<table>
<thead>
<tr>
<th>Fig. No.</th>
<th>Title</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Methods of nanoparticles synthesis.</td>
<td>4</td>
</tr>
<tr>
<td>1.2</td>
<td>Possible chemical constituents of plant extract responsible for the bioreduction of metal ions.</td>
<td>9</td>
</tr>
<tr>
<td>1.3</td>
<td>Photograph of <em>Gloriosa superba</em>.L</td>
<td>12</td>
</tr>
<tr>
<td>1.4</td>
<td>Photograph of <em>Tribulus terrestris</em>.</td>
<td>14</td>
</tr>
<tr>
<td>1.5</td>
<td>Photograph of <em>Coccinia indica</em>.</td>
<td>16</td>
</tr>
<tr>
<td>1.6</td>
<td>Photograph of <em>Leucas martincensis</em>.</td>
<td>18</td>
</tr>
<tr>
<td>1.7</td>
<td>Photograph of <em>Abutilon indicum</em>.</td>
<td>19</td>
</tr>
<tr>
<td>2.1</td>
<td>A typical UV-Vis spectrometer set-up.</td>
<td>42</td>
</tr>
<tr>
<td>2.2</td>
<td>A typical PL spectrometer set-up.</td>
<td>44</td>
</tr>
<tr>
<td>2.3</td>
<td>Powder sample diffract X-ray beam in cones.</td>
<td>47</td>
</tr>
<tr>
<td>2.4</td>
<td>The Principle of Powder X-ray Diffraction.</td>
<td>49</td>
</tr>
<tr>
<td>2.5</td>
<td>Schematic diagram of FT-IR Spectrometer.</td>
<td>53</td>
</tr>
<tr>
<td>2.6</td>
<td>Schematic diagram of scanning electron microscope.</td>
<td>57</td>
</tr>
<tr>
<td>2.7</td>
<td>Typical scanning electron microscope instrument.</td>
<td>61</td>
</tr>
<tr>
<td>2.8</td>
<td>Schematic diagram of TEM.</td>
<td>63</td>
</tr>
<tr>
<td>2.9</td>
<td>A typical TEM set-up.</td>
<td>63</td>
</tr>
<tr>
<td>3.1</td>
<td>Schematic representations of the effect of synthesized AgNPs on the reduction of methylene blue by leaf extract.</td>
<td>69</td>
</tr>
<tr>
<td>3.2</td>
<td>UV–Vis absorption spectra analysis of silver nanoparticles synthesised by <em>G. superba</em> leaf extract.</td>
<td>71</td>
</tr>
<tr>
<td>3.3</td>
<td>Photoluminescence emission spectra of silver nanoparticles synthesised by <em>G. superba</em> leaf extract.</td>
<td>74</td>
</tr>
<tr>
<td>Fig. No.</td>
<td>Title</td>
<td>Page No.</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>3.4</td>
<td>FT-IR spectrums of (a) leaf extract and (b) synthesised Ag nanoparticle.</td>
<td>76</td>
</tr>
<tr>
<td>3.5</td>
<td>XRD patterns of AgNPs nanoparticle synthesised by <em>G. superba</em> leaf extract.</td>
<td>79</td>
</tr>
<tr>
<td>3.6</td>
<td>FE-SEM images of AgNPs nanoparticle synthesised by <em>G. Superba</em> leaf extract (a-d).</td>
<td>81</td>
</tr>
<tr>
<td>3.7</td>
<td>EDX spectrum of AgNPs nanoparticles.</td>
<td>82</td>
</tr>
<tr>
<td>3.8</td>
<td>TEM images of Ag Ps nanoparticle synthesised by <em>G. Superba</em> leaf extract (a-d).</td>
<td>84</td>
</tr>
<tr>
<td>3.9</td>
<td>UV–Visible spectra of methylene blue reduction by <em>G. superba</em> in the presence of AgNPs.</td>
<td>86</td>
</tr>
<tr>
<td>3.10</td>
<td>Antimicrobial activity of AgNPs synthesized by <em>G. superba</em> against S. aureus, B. subtilis, S.typhi and E. coli.</td>
<td>88</td>
</tr>
<tr>
<td>3.11</td>
<td>Size of inhibition zone diameter.</td>
<td>89</td>
</tr>
<tr>
<td>4.1</td>
<td>UV–Vis absorption spectra of silver nanoparticles various concentration of leaf extract (A) 2.0 ml (B) 2.5 ml (C) 3.0 ml (D) 3.5 ml.</td>
<td>95</td>
</tr>
<tr>
<td>4.2</td>
<td>Photoluminescence spectra of silver nanoparticles various concentration of leaf extract (A) 2.0 ml (B) 2.5 ml (C) 3.0 ml (D) 3.5 ml.</td>
<td>97</td>
</tr>
<tr>
<td>4.3</td>
<td>XRD patterns of AgNPs various concentration of leaf extract (A) 2.0 ml (B) 2.5 ml (C) 3.0 ml (D) 3.5 ml.</td>
<td>99</td>
</tr>
<tr>
<td>4.4</td>
<td>FT-IR spectra of synthesised silver nanoparticles various concentration of leaf extract (A) 2.0 ml (B) 2.5 ml (C) 3.0 ml (D) 3.5 ml.</td>
<td>101</td>
</tr>
<tr>
<td>4.5</td>
<td>FE-SEM images of silver nanoparticles various concentration of leaf extract (A) 2.0 ml (B) 2.5 ml (C) 3.0 ml (D) 3.5 ml.</td>
<td>103</td>
</tr>
<tr>
<td>4.6</td>
<td>EDX spectrum of AgNPs.</td>
<td>104</td>
</tr>
<tr>
<td>4.7</td>
<td>TEM images of Ag nanoparticles various concentration of leaf extract (A) 2.0 ml (B) 2.5 ml (C) 3.0 ml (D) 3.5 ml.</td>
<td>105</td>
</tr>
<tr>
<td>Fig. No.</td>
<td>Title</td>
<td>Page No.</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>4.8</td>
<td>UV–Visible spectra of methylene blue reduction by <em>Tribulus terrestris</em> in the presence of AgNPs.</td>
<td>107</td>
</tr>
<tr>
<td>4.9</td>
<td>Antimicrobial activity of Ag NPs synthesized by <em>T. terrestris S. aureus, B. substilis, S.typhi</em> and <em>E. coli.</em></td>
<td>109</td>
</tr>
<tr>
<td>4.10</td>
<td>Size of inhibition zone diameter.</td>
<td>110</td>
</tr>
<tr>
<td>5.1</td>
<td>UV-Vis spectra of silver nanoparticles using <em>C. indica</em> leaf extract at different concentrations (a) 2.0 ml (b) 2.5 ml (c) 3.0 ml (d) 3.5 ml.</td>
<td>116</td>
</tr>
<tr>
<td>5.2</td>
<td>PL spectra of silver nanoparticles using <em>C. indica</em> leaf extract at different concentrations (a) 2.0 ml (b) 2.5 ml (c) 3.0 ml (d) 3.5 ml.</td>
<td>118</td>
</tr>
<tr>
<td>5.3</td>
<td>XRD spectra of silver nanoparticles using <em>C. indica</em> leaf extract at different concentrations (a) 2.0 ml (b) 2.5 ml (c) 3.0 ml (d) 3.5 ml.</td>
<td>120</td>
</tr>
<tr>
<td>5.4</td>
<td>FT-IR spectra of silver nanoparticles using <em>C. indica</em> leaf extract at different concentrations (a) 2.0 ml (b) 2.5 ml (c) 3.0 ml (d) 3.5 ml.</td>
<td>122</td>
</tr>
<tr>
<td>5.5</td>
<td>FE-SEM images of silver nanoparticles using <em>C. indica</em> leaf extract at different concentrations (a) 2.0 ml, (b) 2.5 ml (c) 3.0 ml (d) 3.5 ml.</td>
<td>124</td>
</tr>
<tr>
<td>5.6</td>
<td>EDX spectrum of silver nanoparticles.</td>
<td>125</td>
</tr>
<tr>
<td>5.7</td>
<td>TEM images of silver nanoparticles using <em>C. indica</em> leaf extract at different concentrations (a) 2.0 ml (b) 2.5 ml (c) 3.0 ml (d) 3.5 ml.</td>
<td>126</td>
</tr>
<tr>
<td>5.8</td>
<td>UV-Vis spectra of silver nanoparticles reduction of methylene blue.</td>
<td>129</td>
</tr>
<tr>
<td>5.9</td>
<td>Antibacterial activity of silver nanoparticles against human pathogen (A). AgNps (B) Leaf extract (C) AgNO₃ (D) Distilled water (E) DMSO.</td>
<td>131</td>
</tr>
<tr>
<td>5.10</td>
<td>Size of inhibition zone diameter.</td>
<td>132</td>
</tr>
<tr>
<td>6.1</td>
<td>UV-Vis spectra of silver nanoparticles using <em>L. martinicensis</em> leaf extract at different concentrations (a) 2.0 ml (b) 2.5 ml (c) 3.0 ml (d) 3.5 ml.</td>
<td>137</td>
</tr>
<tr>
<td>Fig. No.</td>
<td>Title</td>
<td>Page No.</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>6.2</td>
<td>PL spectra of silver nanoparticles using <em>L. martinicensis</em> leaf extract at different concentrations (a) 2.0 ml (b) 2.5 ml (c) 3.0 ml (d) 3.5 ml.</td>
<td>140</td>
</tr>
<tr>
<td>6.3</td>
<td>XRD spectra of silver nanoparticles using <em>L. martinicensis</em> leaf extract at different concentrations (a) 2.0 ml (b) 2.5 ml (c) 3.0 ml (d) 3.5 ml.</td>
<td>142</td>
</tr>
<tr>
<td>6.4</td>
<td>FT-IR spectra of silver nanoparticles using <em>L. martinicensis</em> leaf extract at different concentrations (a) 2.0 ml (b) 2.5 ml (c) 3.0 ml (d) 3.5 ml.</td>
<td>144</td>
</tr>
<tr>
<td>6.5</td>
<td>FE-SEM images of silver nanoparticles using <em>L. martinicensis</em> leaf extract at different concentrations (a) 2.0 ml (b) 2.5 ml (c) 3.0 ml (d) 3.5 ml.</td>
<td>146</td>
</tr>
<tr>
<td>6.6</td>
<td>EDX spectrum of AgNPs.</td>
<td>157</td>
</tr>
<tr>
<td>6.7</td>
<td>TEM images of silver nanoparticles using <em>L. martinicensis</em> leaf extract at different concentrations (a) 2.0 ml (b) 2.5 ml (c) 3.0 ml (d) 3.5 ml.</td>
<td>148</td>
</tr>
<tr>
<td>6.8</td>
<td>UV-Vis spectra of silver nanoparticles reduction of methylene blue.</td>
<td>150</td>
</tr>
<tr>
<td>6.9</td>
<td>Antibacterial activity of silver nanoparticles against human pathogen (A). AgNPs (B) Leaf extract (C) AgNO₃ (D) Distilled water (E) DMSO.</td>
<td>152</td>
</tr>
<tr>
<td>6.10</td>
<td>Size of inhibition zone diameter.</td>
<td>153</td>
</tr>
<tr>
<td>7.1</td>
<td>UV-Vis spectra of silver nanoparticles using <em>A. indicum</em> leaf extract at different concentrations (a) 2.0 ml (b) 2.5 ml (c) 3.0 ml (d) 3.5 ml.</td>
<td>159</td>
</tr>
<tr>
<td>7.2</td>
<td>PL spectra of silver nanoparticles using <em>A. indicum</em> leaf extract at different concentrations (a) 2.0 ml (b) 2.5 ml (c) 3.0 ml (d) 3.5 ml.</td>
<td>161</td>
</tr>
<tr>
<td>7.3</td>
<td>XRD spectra of silver nanoparticles using <em>A. indicum</em> leaf extract at different concentrations (a) 2.0 ml (b) 2.5 ml (c) 3.0 ml (d) 3.5 ml.</td>
<td>163</td>
</tr>
<tr>
<td>7.4</td>
<td>FT-IR spectra of silver nanoparticles using <em>A. indicum</em> leaf extract at different concentrations (a) 2.0 ml (b) 2.5 ml (c) 3.0 ml (d) 3.5 ml.</td>
<td>166</td>
</tr>
<tr>
<td>Fig. No.</td>
<td>Title</td>
<td>Page No.</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>7.5</td>
<td>FE-SEM images of silver nanoparticles using <em>A. indicum</em> leaf extract at different concentrations (a) 2.0 ml (b) 2.5 ml (c) 3.0 ml (d) 3.5 ml.</td>
<td>168</td>
</tr>
<tr>
<td>7.6</td>
<td>EDX spectrum of AgNPs.</td>
<td>169</td>
</tr>
<tr>
<td>7.7</td>
<td>TEM images of Ag nanoparticles using <em>A. indicum</em> leaf extract at different concentrations (a) 2.0 ml (b) 2.5 ml (c) 3.0 ml (d) 3.5 ml.</td>
<td>170</td>
</tr>
<tr>
<td>7.8</td>
<td>UV-Vis spectra of silver nanoparticles reduction of methylene blue.</td>
<td>173</td>
</tr>
<tr>
<td>7.9</td>
<td>Antibacterial activity of silver nanoparticles against human pathogen (A). AgNps, (B) Leaf extract, (C) AgNO₃, (D) Distilled water, (E) DMSO.</td>
<td>175</td>
</tr>
<tr>
<td>7.9</td>
<td>Size of inhibition zone diameter.</td>
<td>176</td>
</tr>
</tbody>
</table>